Monthly Webex Tag-up, 12 February 2015

Agenda

1. Announcements and opportunities

2. Science Team Meeting

3. Data Archival and Data Products

4. Recent Data Analysis

DISCOVER-AQ

FRAPPÉ
July-August 2014

TRANSBOUNDARY OZONE POLLUTION CONFERENCE

at TENAYA LODGE at YOSEMITE NATIONAL PARK

Tuesday, March 31 - Thursday, April 2, 2015

About | Agenda | Registration | Lodging and Venue

Directions and Travel Information | Partners and Additional Information

This conference is co-sponsored by AQAST and the San Joaquin Valley Air Pollution Control District

Details are available at: http://www.valleyair.org/TOPC/

Specific questions can be addressed to Ian Faloona (icfaloona@ucdavis.edu)

CENTRAL QUESTIONS ADDRESSED

Based on the current body of evidence derived from observational studies, satellite retrievals and modeling efforts, how and under what circumstances is it possible to make reasonable estimates of TAO contributions to surface concentrations in the western U.S?

Given the goal of robust regulatory incorporation of TAO impacts in the near future, what additional research is needed to resolve existing scientific inference limitations?

WHO SHOULD ATTEND

Air quality scientists, air quality managers, policy professionals and others with an interest in a scientific assessment of how ozone from foreign sources is affecting the western United States.

Archival of AGU and AMS Presentations

We have typically archived presentations and posters from Science Team meetings, but we have not archived any conference presentations since the 2011 Fall AGU.

Archival would be voluntary

Please try to optimize file sizes

Send presentations to Ali Aknan (ali.a.aknan@nasa.gov)

We now have 25 submissions accounting for about one-third of the total number of presentations. You are still welcome to send files to Ali.

Science Team Meeting Update

We would like to start collecting your working titles and your preferences for talks versus posters

(We have 47 submissions to date)

Please send this information to Mary Kleb (Mary.M.Kleb@nasa.gov)

This information is critical to developing the agenda for the meeting.

Submitted Titles focused on Colorado

Group	Presenter	Subject/Title
DFGAS	Fried	Simultaneous Formaldehyde and Ethane Measurements During the 2014 FRAPPE Study
MOPS	Baier	Comparisons of directly-measured and modeled ozone production rates in the Front Range
Park Service	Benedict	Reactive Nitrogen in Rocky Mountain National Park during FRAPPE
Park Service	Sive	Ozone and VOC distributions in Rocky Mountain National Park during FRAPPE
Park Service	Evanoski-Cole	Inorganic aerosol and gas composition measured at Rocky Mountain National Park during FRAPPE
EPA	Long, Russell	Overview of NO2, NOx and NOy Ground-Based Measurements During DISCOVER-AQ Denver 2014
CDPHE	Bon, Daniel	CDPHE policy/goals for papers
Cantrell	Cantrell	Photochemistry of urban, rural, and oil exploration-influenced air masses
UMBC	Hoff	Boundary layer heights and aerosol profiles at the NREL-Golden site from UMBC Lidar
UMBC	Orzoco	Hygroscopic Measurements of aerosol particles in Golden Colorado during the Discover AQ Campaign 2014
NOAA	Cooper, Owen	GO3 Project's surface ozone observations across the Northern Colorado Front Range
TOLNet-GSFC	Sullivan	Quantifying the Impacts of Ozone Recirculation in the Front Range Using Ozone Lidar.
U. Cincinatti	Townsend-Small	Stable isotopic tracers of methane emissions sources during FRAPPE
CAR	Gatebe	Impact of errors in surface directional effects on atmospheric aerosol/cirrus clouds retrieval over heterogeneous landscapes

Submitted Titles focused on Colorado (cont.)

Group	Presenter	Subject/Title
Outreach	Taylor	Public education & outreach work in support of the joint DISCOVER-AQ & FRAPPE campaign
DACOM	Diskin	the performance of the new DACOM during the Colorado deployment
Aerodyne	Herndon	Does the vertical profile of ethane contain more insight into mixing layer height than carbon monoxide?
Aerodyne	Yacovitch	Ethane: A Key to Evaluating Natural Gas Industrial Emissions
TOLNet-NOAA	Langford	Multiple lidar probing of the morning residual layer at the BAO during DISCOVER-AQ/FRAPPÉ
NASA GSFC	Follette-Cook	Evaluation of NOAA/CMAQ Meteorological and Air Quality Forecasts during the Colorado Campaign
NASA GSFC	Stein-Zweers	Operation of the KNMI NO2 Sonde at Golden, CO: Case Studies
NASA GSFC	Pickering	Meteorological Overview of the Colorado Campaign

Submitted Titles focused on other deployments

Group	Presenter	Subject/Title	Campaign
UC-Davis	Zhang, Qi	Submicrometer Particle Characteristics in Fresno during DISCOVERAQ-California	CA
TDLIF	Pusede	TBD (DAQ California)	CA
EPA	Appel	Fine-scale application of the coupled WRF-CMAQ model to the 2013 DISCOVER-AQ San Joaquin Valley campaign	CA
CARB	Chen, James	Simulating elevated PM2.5 episodes in the San Joaquin Valley during the 2013 DISCOVER-AQ Field Campaign (remote presentation)	CA
NASA GSFC	Lamsal	ACAM Retrievals and evaluation of tropospheric NO2 and HCHO	MD
NASA GSFC	Duncan	GEOS-5 Simulation of Stratospheric Intrusions during DISCOVER-AQ – Effects on Ozone Profiles	MD
DFGAS	Fried OR Crawford	Investigations of Formaldehyde Sources Over Houston Texas and Ozone Production	TX
HSRL	Burton	HSRL-2 observations of aerosol variability during an aerosol build-up event during DISCOVER-AQ Houston and comparisons with WRF-Chem	TX
NASA GSFC	Loughner	High Resolution WRF/CMAQ Simulation of Bay and Sea Breeze Circulations Leading to Enhanced Ozone on Sept. 25	TX
NASA GSFC	Follette-Cook	Evaluation of High Resolution Houston CMAQ Simulation Using DISCOVER-AQ Observations	TX
NASA GSFC	Loughner	CMAQ Model Simulation of Primary and Secondary HCHO Impacts	TX

Submitted Titles focused on multiple deployments

Group	Presenter	Subject/Title
UMBC	Berkoff	Summary of Micro-Pulse Lidar Data Obtained During DISCOVER-AQ
NASA GSFC	Chu	Comparative Study of AOD and PM2.5 Relationship in DISCOVER-AQ Field Campaigns
DFGAS	Fried	In Situ Airborne Formaldehyde Measurements During the 4 DISCOVER-AQ Campaigns and Comparisons of Derived Vertical Columns with ACAM & OMI
Gupta	Gupta, Pawan	MODIS Urban Aerosol Retrievals over DRAGON Networks during DISCOVER-AQ Field Campaign: Implication to Surface Air Quality Applications
PTR-MS	Muller	The vertical distribution of volatile organic compounds in the atmosphere as measured during DISCOVER-AQ
ACAM	Liu	Retrievals and Validation of Trace Gases from the ACAM Instrument during the DISCOVER-AQ campaigns
HSRL	Ferrare	Examining HSRL measurements of aerosol optical and microphysical properties and surface PM2.5 during the DISCOVER-AQ Deployments
NASA GSFC	Pickering	What have we learned from DISCOVER-AQ concerning satellite applications for air quality?
NASA GSFC	Follette-Cook	Spatial and Temporal Variability Analysis Using P-3B Observations
NASA GSFC	Flynn	Variability of profile shapes for O3 and NO2 and comparison to modeled profiles during the DISCOVER-AQ project
NASA GSFC	Flynn	Comparison of diurnal cycles for column O3 and NO2 between observation types and model output during DISCOVER-AQ
GeoTASO	Nowlan or Liu	Trace gas retrievals from the GeoTASO aircraft instrument during the DISCOVER-AQ campaigns
NASA GSFC	Mazzuca	Observations and Modeling of the Influence of Thunderstorms on O3 and NOy during DISCOVER-AQ Summer Deployments
EPA	Duvall	Evaluation of Small Sensors for Ozone and Nitrogen Dioxide in Citizen Science-Based Ambient Networks in Houston and Denver

Final Data Status for Colorado

Data from 18 more PI groups have been finalized since the last telecon…THANK YOU.

We have only two more data sets required to satisfy the DISCOVER-AQ final reporting requirements and a few additional data sets associated with FRAPPE. We will be contacting you individually about the status of your data.

Unless there are specific short term needs, we will not create new merges for the aircraft until the final few data sets trickle into the archive.

C-130 Flight Data for 17 and 20 July

Data reporting in the archive is inconsistent for 17 and 20 July.

The 17th was a test flight and the 20th was cut short due to heating problems.

Some teams report final data for these days, while others report nothing. A final group of investigators still have preliminary data for these flights in the archive.

While it is not required to report data for these flights, there is still interest in these observations if they are trustworthy.

We will take care of removing the preliminary data files for those dates from the archive.

Emissions Data for Colorado

Daniel Bon recently provided useful information on natural gas sales and composition. We are interested in archiving other such data if it is available.

If you have information regarding emissions, please consider sharing them in the data archive, e.g.,

-Gridded inventories
-State/County totals and trends
-Data on large facilities
-Anything else you think would be valuable for the analysis ...

Flagging of Aircraft Data for Houston

An error has been found in the flagging of flight data for Houston that will require an update to the data merges:

This does NOT affect the reported flight observations

This does NOT affect the flagging of profiles and missed approaches

This does affect overflight flags for the following locations:
Clinton, Moody Tower, Texas Avenue, Ship Channel

Unless there is a pressing need to correct this sooner, the plan is to have these corrections in the archive sometime in March.

High Resolution Data for Houston TCEQ sites

We have received the high resolution (5 min) observations from TCEQ and are very close to completing the formatting and data IDs needed to put the data in the archive.

This should be completed and available for download by the middle of next week.

Other Useful Data

After looking back over the previous deployments, I have already identified about 5 datasets from partners that were never archived.

We will talk about this at the next telecon, but let us know if there are missing datasets that you would like to see in the archive.

DISCOVER-AQ

FRAPPÉ
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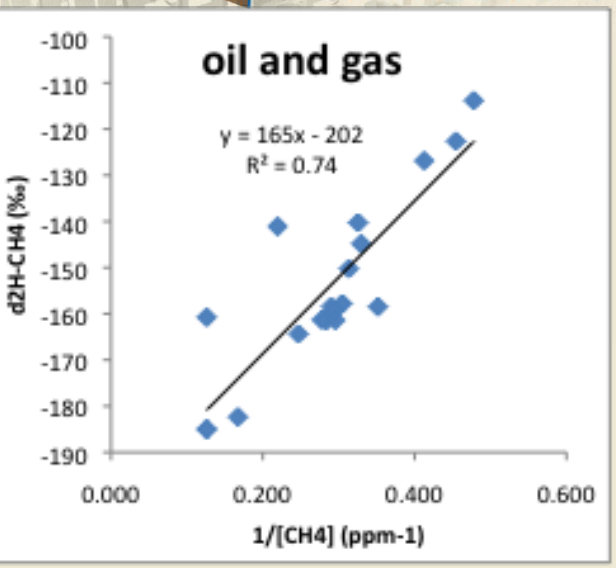
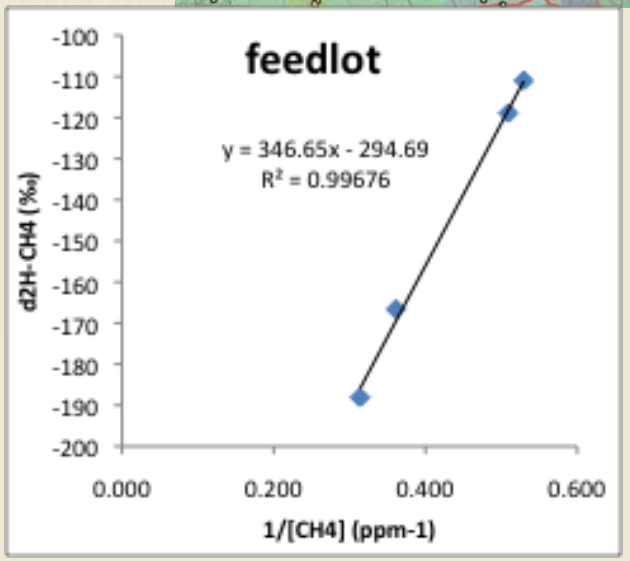
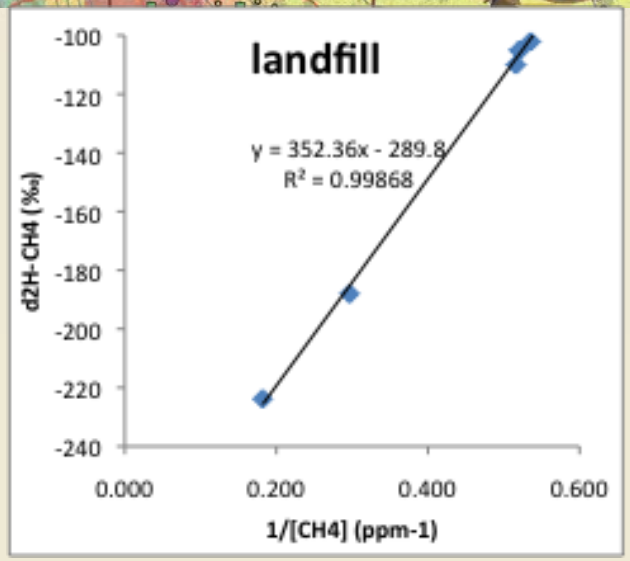
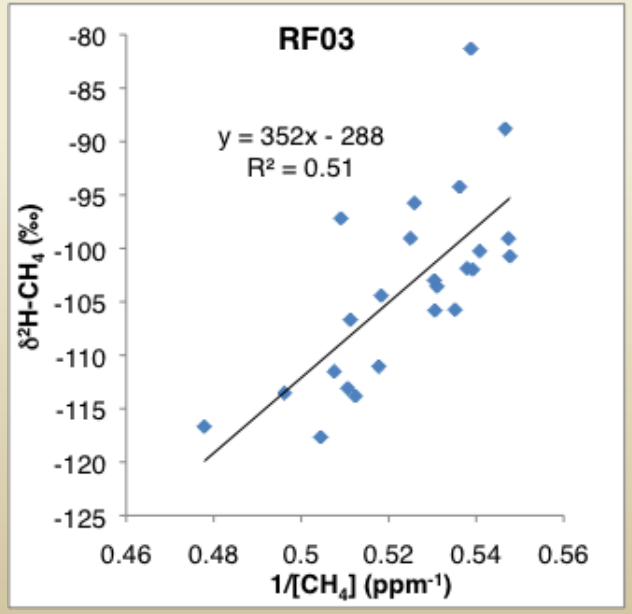






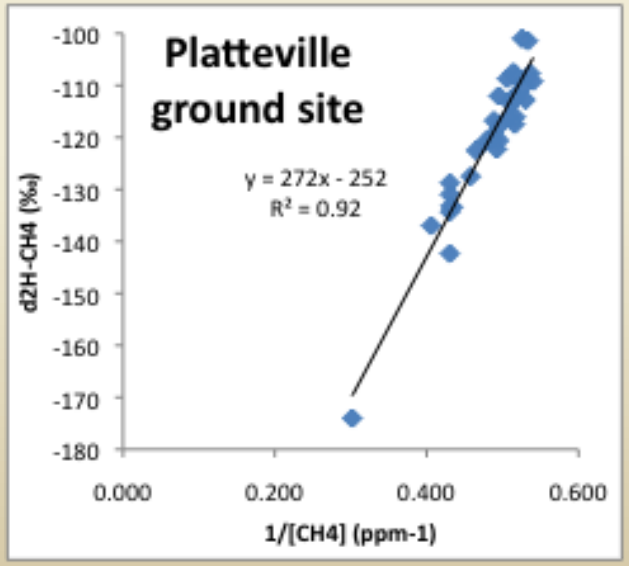
Oil and gas sources have a δ^2H signature of -202‰

Biogenic (landfill and cattle feedlot) sources have a δ^2H signature of -290‰



Example flight dataset: In RF03 it seems the aircraft mostly flew through agricultural sources

Platteville has about equal contribution of O&G and agricultural sources



Amy Townsend-Small (U. Cincinnati)